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Vietnam



50<sup>th</sup> ANNIVERSARY  
AUSTRALIA VIETNAM



BỘ LAO ĐỘNG - THƯƠNG BINH VÀ XÃ HỘI  
TỔNG CỤC GIÁO DỤC NGHỀ NGHIỆP  
DIRECTORATE OF VOCATIONAL EDUCATION AND TRAINING

# Future Logistics and Digital Skills



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# Introduction

- **Current and Expected Logistics**
- **Logistics Challenges**
- **Future Logistics Technologies**
- **Digital Skills**
- **The Role of Education**
- **Problem Solving and Monitoring Performance**
- **Added Bonus - Sustainability**
- **Summary**

# Introduction

Value of logistics and expected growth

		Australia	Vietnam
Expected Market Size	2023	\$89.86 b USD	\$45.19 b USD
	2029	\$113.94 b USD	\$65.34 b USD
Total expected Growth	2024 - 2029	44.60%	26.80%
Logistics percentage of GDP	2023	8.60%	4.65%

# Logistics Challenges

## Population growth

	Australia	Vietnam
2023	26.47 m	98.85 m
2029	30.26 m	102 m
% Increase	14.3%	3.2%
Logistics growth	44.60%	26.80%

## Ageing Workforce

- Aged 55 +
- 2000 = 12% 2021 = 21% 2030 expect 25%+

## Workforce retention

- Move to casual employment
- Loss of Productivity

# Logistics Challenges

## Staff and skills shortages – 2023 business survey (Aust)

- 90% affected by staff shortages
- 36% skills shortage to inhibit growth

## Staff turnover (Aust)

- 2019 logistics workforce = 575,000 Turnover = 48,900 or 8.5%
- Staff replacement = approx. 50% of annual wage
- Reduce to industry accepted level 4% = \$1.445b AUD saving/year

## Customer needs and wants

- Pandemic – moving more to B2C
- Current market = \$56.5 b 2027 = \$82.1b
- More small orders, faster and cheaper





# Future Logistics

## AGVs

- Lift and move goods
- Set travel paths
- Detects an obstacle and stops



## AMRs

- Remove walking
- Autonomous maps
- Detects obstacle – moves around/diverts to new path



# Digital Skills

## Definition:

- The physical operation of digital devices and software
- Search and navigate, create, communicate, think critically, analyse information, address safety and wellbeing

87% of Australian jobs now need digital skills

Developed Australian Digital Capability Framework (ADCF) related to VET

Provides common language

Used by employers, employees, students, training developers, VET professionals.



# Digital Skills in Training

Resistance to change by ageing, and unskilled workforce

How to get willing adoption of digital skills?

Main role of education to identify:

- New skills required by technology
- Where current skills need revision
- Where skills need to be strengthened
- How to recognise/establish portable skills





# Digital Skills in Training

## Second role of education:

- New and emerging technologies contemplated by industry,
- Impacts of new technologies on industry and workforce,
- What new training industry
- Develop training packages while new technologies are adopted,
- How to reduce lag from new technology adoption to delivery of new training

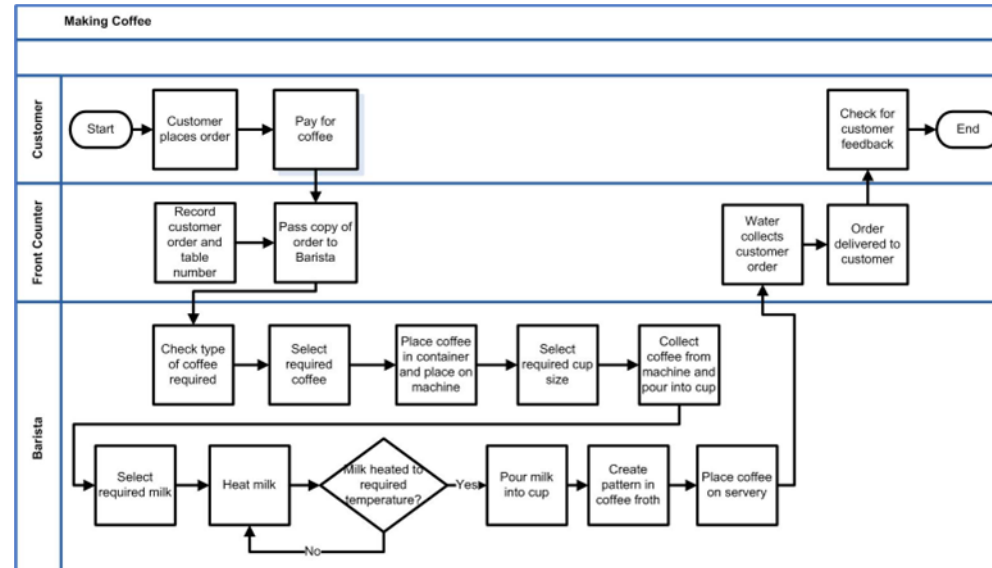
## Area 5 of ADCF focuses on:

- Technical proficiency and problem solving
- Therefore, digital skills must also include upskilling in problem solving and system monitoring

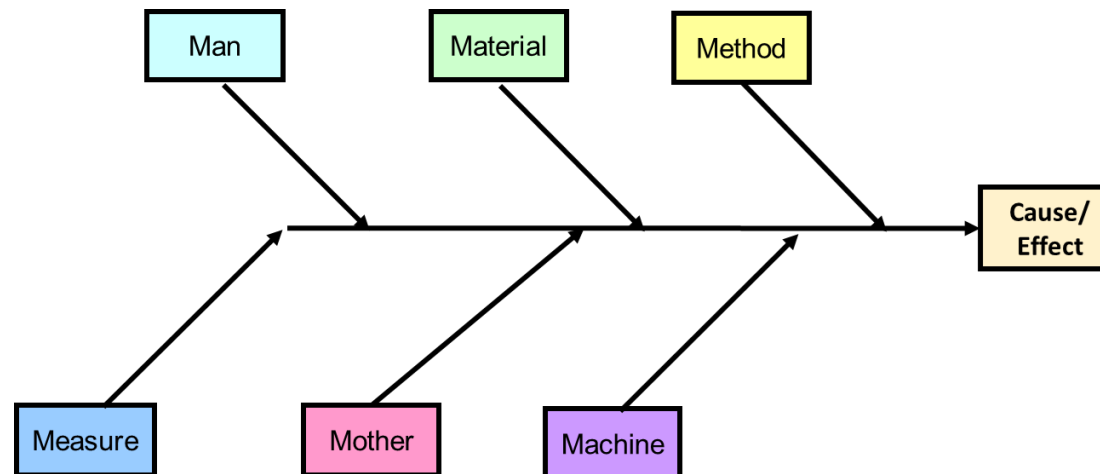


# Problem Solving

## Process mapping



## Cause and Effect



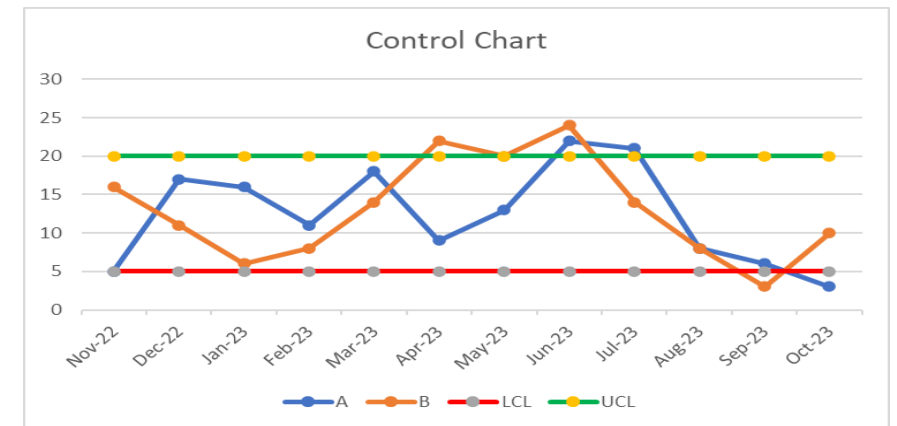
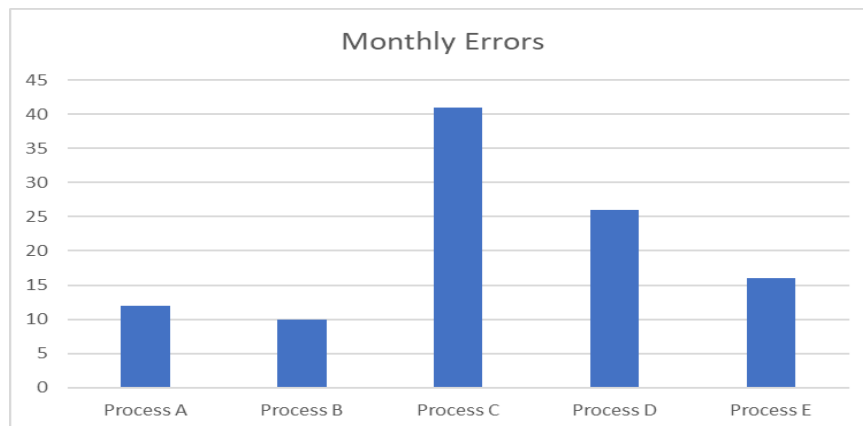
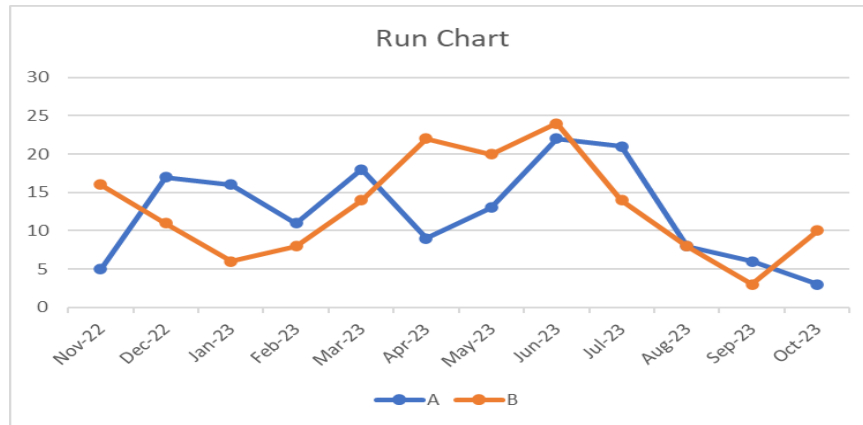
# Performance Monitoring

Charting

Run chart

Control chart

Pareto chart



# Hidden Bonus – Sustainability

Automation and new technology also reducing environmental impact:

- Euro Engine Emission Standards Reduced of Nitrous oxides, sulphur and benzines and Carbon
- Some Australian transport companies have reduced emissions by up to to 40% in last 6 years



Automation reducing impact on resources

- Automation operate in darkness
- Only operator areas need to be lit.



# Hidden Bonus – Sustainability

## Lithium v Lead Acid batteries

Lead Acid	Lithium
8 hour run time = 8 hour charge time	8 hour run time = 2 hour charge time
Multiple shift = multiple batteries	Multiple shift = one batteries
Opportunity charge – not recommended	Opportunity charge = 5/6 minutes/hour
Maintenance required	No maintenance required
Up to 1,000 cycles	Up to 3,000 cycles
Voltage degrades over shift	Voltage constant over sift



Less energy required to charge, more efficient, last 3 times longer



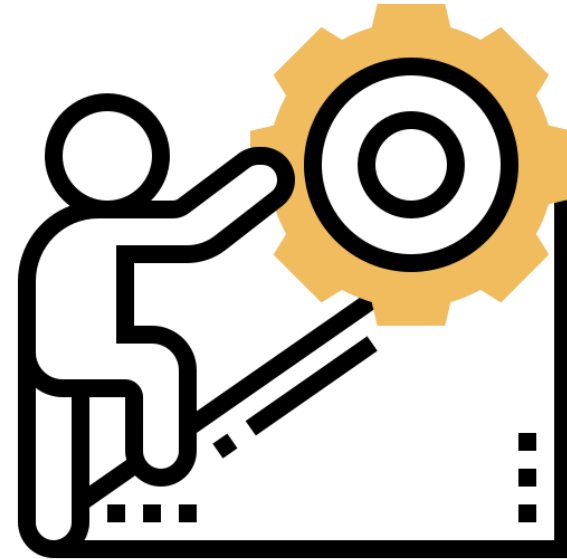
# Summary

## Many challenges facing logistics

- Logistics growth outstripping population growth
- Aging workforce
- Skills shortage

## Major changes:

- Rapid growth of B2C
- Adoption of automation
- Digital technology



# Summary

ACDF describes broad digital capabilities required

Area 5 of ACDF focuses on 'efficiency and problem solving'

Digital skills training to include Problem solving and Performance monitoring tools

Technology and digital skills also brings Sustainability:

- Vehicle emissions, battery technology, lighting.





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# Thank you for your attention!



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